Amendments to the Specification:

Please amend the second full paragraph on page 3 as follows:

A typical use for the compressed helium produced by the helium compressor of Fig. 1 is in supplying a pulse tube refrigerator 61 for the cooling of superconductive MRI magnets. A pulse tube refrigerator of known type may be supplied with high pressure pumped helium gas through an HP line 63 from the HP port 16, while a return flow of helium gas at relatively low pressure returns through an [[HP]] LP line 65 to LP port 18. In this context, the HP port typically provides helium gas at a pressure of around 2.4MPa (24bar), while the LP port typically receives gas at a pressure of around 0.6MPa (6bar). Present pulse tube refrigerators typically employ a rotary valve (RV) mechanism 67. A number of mutually rotating discs define valve opening and closing times, and valve orifice dimension. Such arrangements ensure correct and unchanging timing and dimension relationship between the various valves embodied in the rotary valve mechanism 67. In the present context, both the LP and HP ports would be connected to at least one valve of the rotary valve mechanism.

Please amend the paragraph bridging pages 5 and 6 as follows:

A further investigation was performed to trace the mechanism of the oil carry-over. A pressure gauge was connected at position 31, in place of the further

adsorber, at the distal end of the two metre LP flex line 33, while the other end was connected to the LP port 18 of the compressor. (See Figure 3.) The HP port 16 of the compressor was kept unattached, and therefore, blocked. The initial pressure in the LP line was 0.15MPa (1.5bar). The compressor was run at high HP line pressure of 2.8-2.9MPa (28-29bar) for two to three days. This essentially ran the compressor in an internal bypass condition, with the only gas flow being from the HP line through the internal bypass valve 12 to the LP line. It was found that the pressure in the LP line increased to 0.4MPa (4bar) over a period of time, due to the mixture of gas+oil which travelled through the internal bypass valve 12 without going through the adsorber 19. The gas+oil enters the junction 15. The LP port 18 is at a relatively very low pressure. If the pressure at the junction 15 rises sufficiently, due to the entry of high-pressure gas+oil from the HP line through internal bypass valve 12, it may be possible for some of that gas+oil to travel through the NRV towards and through the LP port 18 into the LP line 65. The two-metre line 33 showed traces of oil when subjected to RGA. This was considered to confirm the hypothesis that gas+oil could cross the NRV. Over a period of time, an appreciable quantity of oil could travel in this way to the LP flex line 65 and then to PTR 61 cold head.

Please amend the first full paragraph on page 11 as follows:

According to a sixth embodiment of the present invention, as illustrated in ~~Fig. 6~~ Fig. 5, the internal bypass valve 12 is provided with its own return channel [[61]] 68 to the compressor capsule 14. In this way, any gas+oil which passes through the internal bypass valve due to excess pressure in the HP line 63, for example, in the case of a stopped rotary 67 valve on an attached equipment 61, will pass directly to the compressor capsule 14, and will not be able to reach the NRV 13 or the LP line 65. Any gas+oil passing through the internal bypass valve 12 will be at a relatively high pressure, much higher than the pressure inside the LP line 65. To prevent the gas+oil from flowing through the compressor capsule 14 into the LP line 65, the return channel [[61]] 68 is connected to the compressor pump, such as the scroll pump illustrated in Figs. 2A-2D at a relatively high pressure location, closer to the centre of the scrolls than the openings 27, 27' which will receive gas from the LP port 18. The return channel [[61]] 68 is preferably connected to the compressor by its own manifold, deep in the core of the compressor. Since the helium gas is mixed with oil in the compressor, the fact that the return channel [[61]] 68 provides gas+oil raises no problems. A disadvantage to this particular embodiment lies in that modifications are required to the compressor capsule.